

AMENDMENTS TO THE CLAIMS

27. (Currently Amended) A method for linearly dispersing charged particles by their mass-energy-to-charge ratios, comprising introducing charged particles into a magnetic separator having an inhomogeneous magnetic field in one plane and a homogeneous magnetic field in another plane ~~produced by a magnetic separator~~ that provides a linear dispersion of the charged particles proportional to their mass-energy-to-charge ratio.

28. (Canceled)

29. (Original) The method of Claim 27 wherein the linear dispersion of the charged particles proportional to their mass-energy-to-charge ratio is along a predetermined plane.

30. (Original) The method of Claim 27 further comprising providing a transverse gradient magnetic field for focusing uncollimated charged particle beams.

31. (Original) The method of Claim 27 wherein the magnetic field varies according to the function $B(x) = B_0 x^{-3/4}$, where B_0 is a magnetic field constant chosen to match a nominal magnetic field and X is a distance measured along the separator's centerline axis.

32. (Original) The method of Claim 27 wherein the magnetic separator comprises a single magnet.

33. (Original) The method of Claim 32 wherein the magnet comprises two poles separated by a gap through which pass charged particle beams.

34. (Original) The method of Claim 33 wherein the gap between the poles varies according to the function $g(x) = \tan(x^{-1/4})$, where x is a distance measured along the pole surface.

35. (Canceled)